WHAT IS CLAIMED IS:

1. A method of scaling an image signal, comprising:

storing the image signal in an image signal memory;

receiving a source scaling factor having a numerator and a denominator, the numerator and the denominator being positive integers;

calculating upper and lower approximate simplified scaling factors, the upper approximate simplified scaling factor being a fraction, greater than the source scaling factor, having a numerator less than the numerator of the source scaling factor and a denominator less than the denominator of the source scaling factor, the lower approximate simplified scaling factor being a fraction, less than the source scaling factor, having a numerator less than the numerator of the source scaling factor and a denominator less than the denominator of the source scaling factor;

calculating repetition counts indicating how often the upper and lower approximate simplified scaling factors are to be used;

generating, from the upper and lower approximate simplified scaling factors, address information for reading reference pixels from the image signal stored in the image signal memory, a selection signal selecting the upper approximate simplified scaling factor or the lower approximate simplified scaling factor, and phase information indicating where pixels are to be interpolated in relation to the reference pixels;

generating interpolation coefficients according to the upper and lower approximate simplified scaling factors and the phase information;

reading the reference pixels from the source image signal memory according to the address information; and

performing interpolation on the reference pixels, using

the interpolation coefficients corresponding to the approximate simplified scaling factor selected by the selection signal, and outputting interpolated pixels.

2. The method of claim 1, further comprising dividing a line in the source image into a plurality of parts, wherein the selection signal selects just one of the lower approximate simplified scaling factor and the upper approximate simplified scaling factor in each of said parts.

3. The method of claim 1, further comprising receiving a limit value, wherein the numerator and denominator of the lower approximate simplified scaling factor are both within the limit value and the numerator and denominator of the upper approximate simplified scaling factor are both within the limit value.

4. The method of claim 3, wherein, when the source scaling factor is a proper fraction, calculating the lower approximate simplified scaling factor further comprises:

decomposing the proper fraction into unit fractions; and

adding the unit fractions in ascending order of their denominators to obtain a sum fraction, continuing as long as the denominator of the sum fraction stays within the limit value.

5. The method of claim 3, wherein, when the source scaling factor is an improper fraction, calculating the lower approximate simplified scaling factor further comprises:

changing the improper fraction to a mixed number including an integer and a proper fraction;

decomposing the proper fraction into unit fractions; and

adding the unit fractions to the integer in ascending order of their denominators to obtain a new improper fraction, continuing as long as the numerator of the new improper fraction stays within the limit value.

6. The method of claim 3, wherein the repetition count of the lower approximate simplified scaling factor is calculated from the source scaling factor, the lower approximate simplified scaling factor, and the limit value.

7. The method of claim 6, wherein the repetition count of the upper approximate simplified scaling factor is calculated from the source scaling factor, the lower approximate simplified scaling factor, and the repetition count of the lower approximate simplified scaling factor.

8. The method of claim 1, wherein the selection signal is generated by comparing a first cumulative sum with a second cumulative sum, the repetition count of the upper approximate simplified scaling factor being added to the first cumulative sum when the lower approximate simplified scaling factor is selected, the repetition count of the lower approximate simplified scaling factor being added to the second cumulative sum when the upper approximate simplified scaling factor is selected.

9. The method of claim 1, further comprising:

storing the generated interpolation coefficients in an interpolation coefficient memory; and

reading the interpolation coefficients from the interpolation coefficient memory as necessary for performing interpolation.

10. A scaling apparatus for scaling an image signal,

comprising:

an image signal memory for storing the image signal;

an approximate simplified scaling factor generator for receiving a source scaling factor having a numerator and a denominator, the numerator and the denominator being integers, calculating upper and lower approximate simplified scaling factors, the upper approximate simplified scaling factor being a fraction, greater than the source scaling factor, having a numerator less than the numerator of the source scaling factor and a denominator less than the denominator of the source scaling factor, the lower approximate simplified scaling factor being a fraction, less than the source scaling factor, having a numerator less than the numerator of the source scaling factor and a denominator less than the denominator of the source scaling factor, and calculating repetition counts indicating how often the upper and lower approximate simplified scaling factors are to be used;

an address information generator for generating, from the upper and lower approximate simplified scaling factors, address information for reading reference pixels from the image signal stored in the image signal memory, a selection signal selecting the upper approximate simplified scaling factor or the lower approximate simplified scaling factor, and phase information indicating where pixels are to be interpolated in relation to the reference pixels;

an interpolation coefficient generator for generating interpolation coefficients corresponding to the upper and lower approximate simplified scaling factors and the phase information; and

an interpolation unit for reading the reference pixels from the image signal memory according to the address information, performing interpolation on the reference pixels, using the interpolation coefficients corresponding

to the approximate simplified scaling factor selected by the selection signal, and outputting interpolated pixels.

11. The apparatus of claim 10, wherein:

the interpolation unit divides a line in the source image into a plurality of parts; and

the selection signal selects just one of the lower approximate simplified scaling factor and the upper approximate simplified scaling factor in each of said parts.

12. The apparatus of claim 10, wherein the approximate simplified scaling factor generator receives a limit value that limits the numerator and denominator of the lower approximate simplified scaling factor and the numerator and denominator of the upper approximate simplified scaling factor.

13. The apparatus of claim 12, wherein, when the source scaling factor is a proper fraction, the approximate simplified scaling factor generator calculates the lower approximate simplified scaling factor by decomposing the proper fraction into unit fractions and adding the unit fractions in ascending order of their denominators to obtain a sum fraction, continuing as long as the denominator of the sum fraction stays within the limit value.

14. The apparatus of claim 12, wherein, when the source scaling factor is an improper fraction, the approximate simplified scaling factor generator calculates the lower approximate simplified scaling factor by changing the improper fraction to a mixed number including an integer and a proper fraction, decomposing the proper fraction into unit fractions, and adding the unit fractions to the integer in ascending order of their denominators to obtain a new

improper fraction, continuing as long as the numerator of the new improper fraction stays within the limit value.

15. The apparatus of claim 12, wherein the approximate simplified scaling factor generator calculates the repetition count of the lower approximate simplified scaling factor from the source scaling factor, the lower approximate simplified scaling factor, and the limit value.

16. The apparatus of claim 15, wherein the approximate simplified scaling factor generator calculates the repetition count of the upper approximate simplified scaling factor from the source scaling factor, the lower approximate simplified scaling factor, and the repetition count of the lower approximate simplified scaling factor.

17. The apparatus of claim 10, wherein the address information generator generates the selection signal by comparing a first cumulative sum with a second cumulative sum, the repetition count of the upper approximate simplified scaling factor being added to the first cumulative sum when the lower approximate simplified scaling factor is selected, the repetition count of the lower approximate simplified scaling factor being added to the second cumulative sum when the upper approximate simplified scaling factor is selected.

18. The apparatus of claim 10, further comprising an interpolation coefficient memory for storing the generated interpolation coefficients, wherein the interpolation unit reads the interpolation coefficients from the interpolation coefficient memory as necessary when performing interpolation.